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NOTES ON NORTH CAROLINA BRYOPHYTES.

A. J. GROUT.

A few hepatics were collected during my summer at the Pink Beds, in 1907, but a long delay in identifying them has prevented previous publication. These listed below were gathered incidentally to the collection of mosses. See THE BRYOLOGIST, XI: March, 1908.

1. *Bazzania triangularis* (Schleich.) Lindb. On moist rocks, near Green Knob, alt. 5000 feet.
2. *Calypogeia Trichomanis* (L.) Corda. Same habitat as last species.
3. *Cephalozia curvifolia* (Dicks.) Dumort. On summit of Chestnut Bald, alt. about 6000 feet.
4. *Diplophylleia apiculata* Evans. Collected with No. 1.
5. *Frullania Asagrayana* Mont. On bark of young balsams, on summit of Chestnut Bald.
6. *Frullania Eboracensis* Gottsche. On summit of Chestnut Bald.
7. *Geocalyx graveolens* (Schrad.) Nees. Collected with No. 3.
8. *Herberta adunca* S. F. Gray. On bark of trees in the mountains.
9. *Lepidozia sylvatica* Evans. Collected with No. 2.
10. *Lophozia gracilis* (Schliech.) Steph. Collected with No. 3.
11. *Marchantia polymorpha* L. In the Pink Beds.
12. *Metzgeria conjugata* Lindb. On Chestnut Bald.
13. *Odontoschisma denudatum* (Mart.) Dumort. Near summit of Green Knob.
14. *Pellia epiphylla* (L.) Corda. Locality not noted.
15. *Plagiochila Sullivantii* Gottsche. Collected with No. 5. Stunted o very immature.
16. *Porella platyphylla* (L.) Lindb. Collected with No. 3.
17. *Riccardia* sp. Cool spring under rocks, in Pink Beds, alt. 3300 feet.
18. *Scapania* sp. Fragments, on bare cliffs on summit of Chestnut Bald.
19. *Scapania nemorosa* (L.) Dumort. Common.
20. *Sphenolobus exsectus* (Schmid.) Steph. Collected with No. 3.
21. *Trichocolea tomentella* (Ehrh.) Dumort. Locality not noted.

On a moss-coated, stunted yellow birch on the top of Chestnut Bald the following species of mosses and hepatics were collected: *Dicranum fulvum*, *D. longifolium*, *Ulota crispa*, *Zygodon excelsus*, *Brachythecium oxyclodon* forma, *Entodon brevisetus*, *Homalotheciella subcapillata*, *Pylaisia subdenticulata*, *P. intricata*, *Raphidostegium recurvans* forma *flagellata*, *Neckera pennata*, *Frullania Asagrayana*, *F. Eboracensis*, *Metzgeria conjugata*, *Porella platyphylla*. New Dorp, New York.

SEQUENCE OF MOSS GROWTHS.

[The following letter received March 27, was not intended for publication, but it seems to be of sufficient interest as calling attention to phenomena possibly noticed by others in different sections of the country. Mr. Hill wrote in a previous letter "The past season has been a very poor one for moss hunters, indeed for several seasons the moss flora seems to have almost entirely failed, at least as far as fruiting is concerned. These cycles are puzzling, and they appear to hold with several, possibly all departments of our botany. In 1904 the *Agarics* were in wonderful profusion and variety, and I added about 150 varieties to my collection, this year not one."]

DEAR MRS. SMITH;

At the risk of appearing obtuse and of broaching a subject trite to careful observers, permit me to call your attention, and that of Members of the Society, to a few facts with regard to alternation of moss growth that have forced themselves upon my notice during the years in which I have taken an interest in bryological study. Your attention has already been called to the fact that only a small percentage of the seasons yields what may be called a full exhibition of the Moss flora of this coast, but an additional peculiarity is noticeable in the fact that alternate years exhibit an entirely changed facies in the products of the same locality.

For instance, 1904 was a most prolific season in our moss flora and the *Mniums*, in their several varieties, being among the most abundant of our genera, were in evidence everywhere and while the smaller varieties were not wanting, *Mnium insigne* was very greatly in the ascendant, covering large spaces with dense and luxuriant growth in finest fruitage. Such patches could not fail to catch the eye of the collector and to be permanently located by him; but fancy the surprise when the next season not a single plant of *M. insigne* was to be found, but in its place, in every instance, the smaller varieties were invariably substituted.

It would be interesting to know if other students have observed a like phenomenon.

A somewhat similar case is now in evidence on an old and neglected lawn in this vicinity. The soil is slightly damp and last year was covered with a dense, matted growth of minute and sterile *Mniums*, whereas this season it is as densely covered with well developed *Hylocomium triquetrum*, also sterile, and not a *Mnium* of any variety is to be seen. It is a patent fact that not a plant of either of these mosses occurs within considerable distances of this old lawn and as *H. triquetrum* is well known to be an exceedingly rare fruiter, it is a matter of wonder how these startling alternations of genera and species can occur.

Another peculiar fact presents itself in the case of *Funaria hygrometrica* which never fails to appear in densest growth wherever, in damp situations, the soil has been recently and thoroughly burned.

One may be prepared to attribute the phenomenon to abio-genesis but if not to what source can we trace it?

The same peculiarity is noticeable in forest growth. While not so much in evidence on this coast where practically all our forests are evergreen without any alternation, it is an invariable rule in our Eastern Provinces that the destruction of an evergreen forest is immediately succeeded by a deciduous growth and vice versa. It is not unusual to see the site of a former fir forest, which has been thoroughly burned, spring up within a year to a dense growth of black cherry or silver birch where no one would suspect that a cherry pit could have survived the conflagration much less the fragile seed of the birch. Then where did this multitude of cherry pits come from, when to a certainty no cherry tree had existed in the vicinity for a century at least, and how could they in any event have escaped destruction in such a furnace as that to which they were necessarily subjected!

The subject I know has been thrashed out from Aristotle to Huxley without reaching a satisfactory solution. Can any of our members advance a theory that will aid in solving the problem?

Very sincerely yours,

ALBERT J. HILL.

REVIEW—THE BRYOPHYTES OF CONNECTICUT.

By ALEXANDER W. EVANS and GEORGE E. NICHOLS, State Geolegical and Natural History Survey, Bulletin No. II.

It would be difficult to overestimate the value of this contribution to Bryology. Not only is it a perfect model of what such a work should be, but its comprehensiveness makes it so nearly a manual that it will be of great service to students. Dr. Grout having already reviewed the work[1] it is merely my intention to dwell upon some parts of it, that is the first three orders comprising the hepatics: the Marchantiales, the Jungermanniales, the Anthocerotales. The dozen pages filled with the general characteristics of the Bryophytes and the general characteristics of these three groups are of utmost value to students. I hope many will obtain this Report[2] and study these pages. There is a fine chapter devoted to the distribution of the Bryophytes in the State according to environment to which I also call the student's attention. This is followed by another chapter on their economic value and then comes the catalogue in which the one hundred and seven species of hepatics fill thirty-eight of the one hundred and thirty-nine pages and give us the last word in nomenclature.

Dr. Howe in his review of the Report in Torreya[3] says; "*The Bryophytes of Cannecticut* will prove almost as useful in New York and indeed along the whole North Atlantic seaboard as it will in Connecticut."

CAROLINE COVENTRY HAYNES.

SULLIVANT MOSS SOCIETY NOTES.

Sullivant Moss Society Members and Students of the Hepatics.

Dr. George H. Conklin, 1204 Tower Ave., Superior, Wisconsin, will now take charge of our Herbarium and look after the varied interests of the Hepatic Department. Specimens and inquiries may be addressed to him. I am sincere in saying that I regret to be obliged to give up, temporarily, this work. It has been such a pleasure to see it grow; the herbarium, for one thing, is eleven times larger, and it is good to know of the keen interest of a number of the members. There are already long lists of species from several

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[1] THE BRYOLOGIST, Vol. XII: 2. 1909.

[2] No. II, thirty cents, George S. Godard, State Librarian, Hartford, Conn.

[3] Torreya Vol. IX: 2, 1909.